

ABSTRACT OF THE DISCLOSURE

A cable for use in a predetermined voltage class, has a conductor; an insulating layer surrounding the conductor, the insulating layer having a thickness selected to provide a predetermined electrical stress when the cable is operated at a nominal voltage in said predetermined voltage class; and a protective element around the conductor having a thickness and mechanical properties selected to provide a predetermined impact resistance capability, the protective element having at least one expanded polymeric layer. The insulating layer thickness and the protective element thickness are selected in combination to minimize the overall cable weight while preventing a detectable insulating layer damage upon impact of 50 J energy. A method for designing a cable is also disclosed.